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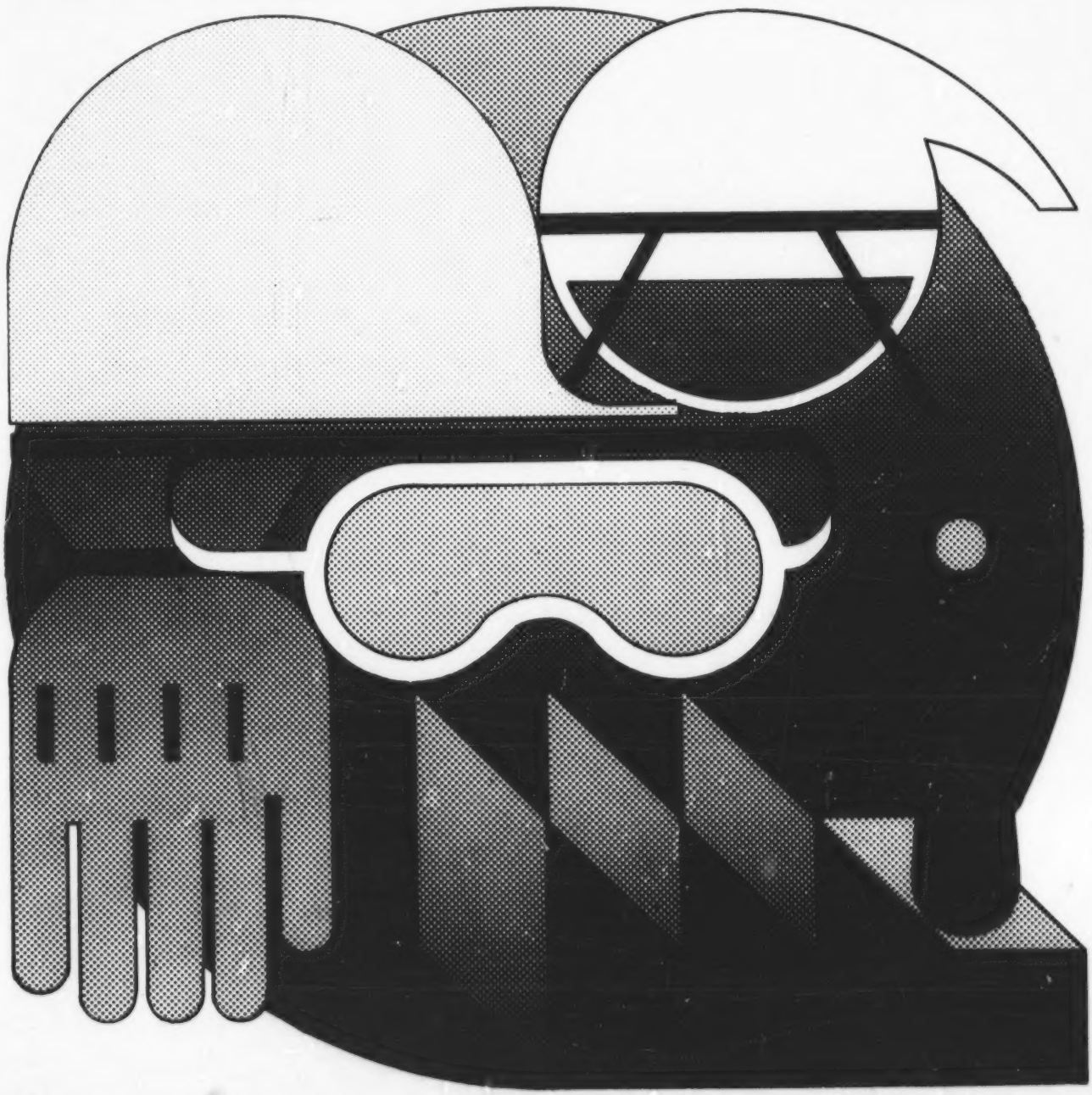
Injuries Involving Longshore Operations

U.S. Department of Labor
Bureau of Labor Statistics
May 1989

Bulletin 2326



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Injuries Involving Longshore Operations

U.S. Department of Labor
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Bureau of Labor Statistics
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May 1989

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Preface

This bulletin summarizes the results of a survey of work-related injuries involving longshore operations during selected reporting periods in 1985 and 1986. The findings of this survey have been of assistance to the Occupational Safety and Health Administration (OSHA) in developing safety standards, compliance strategy, and training programs for reducing work-related injuries.

The survey was conducted by the Bureau of Labor Statistics' Office of Safety, Health, and Working Conditions, in cooperation with the Employment Standards Administration's Office of Workers' Compensation Programs, Division of Longshore and Harbor Workers' Compensation. The survey design was developed in consultation with staff of the Occupational Safety and Health Administration.

The survey covers cases processed under the Federal Longshoremen's and Harbor Workers' Compensation Act during October 1985 in the New York Office of Workers' Compensation Programs and during April 1986 for the following other Offices: Baltimore, Boston, Houston, Jacksonville, Long Beach, New Orleans, Norfolk, Philadelphia, San Francisco, and Seattle.

A list of work injury reports published since 1978 appears at the end of this bulletin.

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Injuries Involving Longshore Operations

Introduction

Cargo-handling operations on the waterfront are among the most hazardous activities in the Nation's workplaces. The high risk of injury faced in longshoring is reflected in the injury and illness rate for workers in water transportation services.[1] In 1987, there were 17.0 injuries and illnesses per 100 full-time workers, double the national rate for all private industries (8.3). Most of the longshoring cases resulted in days away from work or restricted work activity, or both. The industry's incidence rate of lost workday cases, 10.2, was more than 2.5 times the national average (3.8), while its rate of lost workdays, 422.2 per 100 full-time workers, was the highest of any industry and was 6 times greater than the national rate (69.9) in 1987.[2]

At the request of the Occupational Safety and Health Administration, the Bureau of Labor Statistics surveyed a sample of longshore workers to obtain more information on the actions and hazards associated with their work injuries. Three broad types of information were collected: (1) demographic characteristics, such as the age and occupation of the injured worker; (2) case characteristics, including the nature and the severity of injury; and (3) factors surrounding the incident, such as worksite conditions at the time of the accident and use of personal protective equipment.

While shedding some light on safety factors in longshoring, the survey was not designed to explore all types of cases. Fatalities and assaults, for example, were specifically excluded from the scope of the survey, as were cases occurring 120 days or more before being processed in the survey reference periods—October 1985 in New York-New Jersey ports and April 1986 in the other ports studied. These reference periods, moreover, do not necessarily reflect, in a statistical sense, the types and numbers of cases recorded for a whole year. (See Appendix A for a description of the scope of the survey.)

[1] Marine cargo handling accounts for a clear majority of the 95,000 workers in water transportation services. The latter industry group also includes the handful of workers in canal operation and substantial numbers doing miscellaneous services incidental to water transportation, not elsewhere classified, such as hiring and chartering of commercial boats.

[2] *Occupational Injuries and Illnesses in the United States by Industry, 1987*, Bulletin 2328 (Bureau of Labor Statistics, 1989), table 1. The rate of lost workdays is one indication of the severity of the cases that were reported.

Survey results

Demographic characteristics of the 582 injured longshore workers in this study included their occupation, age, sex (virtually all were men), and tenure—both in the job category at the time of the accident and in longshoring.

The generic title "longshoreman" is a derivative of "alongshoreman" which evolved from calls in colonial times for "men along the shore" to unload and load ships.[3] This study also defined longshore operations to include the shoreside work at marine terminals and related areas where cargo is handled and stored and where cargo handling and other equipment is maintained.

About four-fifths of the injured workers were employed in the seven specific job categories used in this study (table 1). "Holdman," who commonly works below the deck of a vessel where the cargo is stowed, was the job title of about three-tenths of the injured; "driver" of forklifts, tractors, etc., accounted for one-sixth; and "dockman"—who helps equipment operators to hook on cargo, for example—made up one-eighth of the injured. Other injured workers were either classified as checkers, deckmen, maintenance mechanics, or warehouse workers, or were placed in the "other" category, a diverse grouping ranging from first-line supervisors to general laborers.

Youth and inexperience—characteristics often mentioned as contributing to workplace injuries—were noticeably absent among the injured longshore workers studied. About three-fourths of the injured, in fact, were 35 years or older, and, of these, three-fifths were at least 45 years old (table 2).[4] As for tenure, about four-fifths had been in their job category at the time of the accident for 5 years or more, and three-fourths had worked in longshoring at least 10 years (table 3). There are indications that the age-experience profile of injured workers mirrors that for the whole longshoring work force.

[3] For an informative history of work on the docks in the United States, see *Men Along the Shore*, by Maud Russell (New York, Brussel & Brussel, Inc., 1966).

[4] In marked contrast, only about one-fourth of all workers moving, by hand, freight, stock, and other nonconstruction materials were 35 years or older in 1986, according to unpublished data from the BLS Office of Employment and Unemployment Statistics.

For the past generation, entry into the longshore work force has been limited because automation and, to a lesser extent, foreign competition have greatly reduced labor requirements for handling cargo.[5] The 1988 annual report of the New York Shipping Association, for example, pointed to a steady decline in names on its longshore register—from 30,000 in the mid-1950's to about 6,200 in 1987; the latter figure, according to the association, represented 25 to 35 percent more longshore workers than longshore jobs available on a given day. Similar trends were evident in other U.S ports.

Case characteristics of the injured workers profiled the type of accident, source of injury, and severity of injury.

Almost four-tenths of the workers studied were injured as a result of being struck by or against objects, most commonly either crates, containers, and cargo stow, or hoisting apparatus, such as cranes. Another one-fourth suffered falls from elevations or falls on the same level of a ship or onshore. Descriptions of other events associated with longshore accidents, including those involving vehicles and equipment, are given in table 4.

Several dozen objects and substances, ranging from unidentified particles to derricks, were cited as sources of longshore injuries (table 5). Grouped by broad category, the sources responsible for at least one-eighth of the accidents studied were: Boxes, barrels, and containers; metal items (including structural metal, fasteners, pipes, and fittings); working surfaces on and off ships; and vehicles, such as front and top-end loaders. The latter category points up the risks that have evolved with increased use of vehicles and mobile equipment in moving and handling cargo.

Information on the nature of the injury, the part of the body affected, and outcome of the case (e.g., lost workday or overnight hospitalization) helps to gauge the severity of accidents in longshoring. Muscle sprains or strains, the most common injury, were sustained by about one-half of the workers studied (table 6). Bruises were next in frequency, affecting three-tenths of the injured, followed by cuts (including lacerations and punctures) and by fractures, each cited in about one-fifth of the cases. As a nature-of-injury classification, fracture (broken bone) appeared to be somewhat more common in longshoring than in private industry as a whole.[6]

Injuries to the legs, ankles, and other lower extremities were sustained by almost three-tenths of the workers (table 7). Another three-tenths experienced injuries to the trunk of their bodies, usually to the back, while for one-fifth, the upper extremities, particularly the fingers, were the affected site. Examples of types of injuries reported included back sprains, torn cartilage in the knee, and fractures of the ankle, foot, or toe. Almost four-fifths of the injured workers lost days away from work as a result of their accidents (table 8). Most lost workday cases resulted in at least 10 days away from work—the top interval used in this study.[7] One-eighth of all cases resulted in hospitalization for at least one night, with an average hospital stay of 6 nights.

Accident-related factors may address certain conditions and circumstances that surround or are connected with an injury. In this context, injured longshore workers were asked to provide such information on their accidents, including specific work activity, personal protective equipment, description of the worksite, worksite conditions or other factors thought to be contributing, safety and training experience, and what they felt would have been the best preventive measures.

About three-tenths of the injuries occurred to workers while they were manually handling cargo, equipment, or both (table 9). Helping crane or winch operators to load or unload cargo ranked next in frequency—involving one-fifth of those injured. Driving mobile equipment and climbing or descending ladders, gangways, vehicles, etc. each were cited in one-tenth of the cases studied. A large majority of the injured workers reported that the type of work being performed at the time of the accident was the same as the work they performed during the course of a normal workday.[8]

Nine-tenths of the injured longshore workers were wearing at least one type of personal protective equipment at the time of their accident (table 10). The most common safety gear was the hardhat, worn by about three-fourths of the injured. Three-fifths used gloves, and the same proportion wore steel-toed boots/shoes. Most workers indicated that the current or previous employers typically provided, or paid for, some personal protective equipment, usually a hardhat.

The location of workers at the time of the accident was evenly split between sites aboard ship and those on shore (table 11). Shipside, a majority of the accidents cited were in the cargo hold area or between decks. Shoreside, the most common sites of injuries were: (1) on the pier (a landing place for waterborne cargo); (2) inside a warehouse, shed, or garage; and (3) in the "yard," where mobile equipment is often found. On board ship or off, seven-tenths of the injured said that they were working a ship at the time of their accident. The most common type of ship cited handled "break/bulk" cargo (that is, individual goods, such as lumber), loaded or discharged in the traditional manner on conventional lift-on/lift-off ships.

Climatic conditions did not appear to play a major role in longshore accidents covered by this survey. Most

[5] Since the late 1960's, for example, the register for longshore jobs in the port of New York and New Jersey, with two exceptions, has been closed to new entrants. (The exceptions were made in 1979 and in 1985.) Also, reductions in manning requirements for particular operations have been negotiated by labor and management in several ports.

[6] The Bureau's Supplementary Data System, covering current disability cases for 23 States in 1986, showed that fractures accounted for 11 percent of the workplace injuries in private industries included in this data base.

[7] For water transportation services as a whole, the average lost-time case resulted in 41 days away from work in 1987—the rate of lost workdays per 100 full-time workers (422.2) divided by the rate of lost workday cases (10.2). See Introduction for further details on these rates.

[8] This information was received only for ports in the April 1986 segment of the survey and does not apply to New York.

frequently, skies were described as clear or sunny at the time of the accident; fewer than one-eighth of the injured mentioned "rainy" or "windy" working conditions. Not unexpectedly, a large majority of the accidents occurred between 8 a.m. and 5 p.m., during the traditional day-shift hours (table 12); about one-eighth happened on the evening shift.

Seven-tenths of the injured workers indicated that hazardous conditions at the worksite contributed to their accidents (table 13). Slippery or uneven work surfaces, faulty equipment, and a limited work area were most often cited; however, none of these was mentioned by more than one-fifth of the injured. Contributing factors of a more general nature were cited by nearly seven-tenths of the injured workers. Hurrying or being rushed and being unaware of danger each were indicated by one-fifth of the workers. Other factors most often mentioned as a possible cause of their accidents included co-workers' actions, the weight or bulk of materials, and carelessness on the part of injured workers.

Three-fifths of the workers indicated that they had not received safety training in longshore operations in the 3 years immediately preceding their accident (table 14). Of those who had received safety training, the training most commonly covered the operation of mobile equipment or handling cargo. The sources of training most often cited were the company or shipping association, closely followed by the union. Despite their injuries, workers felt that their safety training helped in accident prevention. Training aside, three-fifths of the injured felt that safety rules *usually* were enforced by the company; another one-fifth sensed that such rules were enforced *sometimes*.

Almost four-fifths of the injured workers felt that their type of accident could have been prevented (table 15). A wide variety of preventive actions, methods, or procedures were mentioned, but none was cited by more than one-eighth of the injured. These measures included having more people, more time, and better equipment to perform the task. In contrast, better safety training or stricter enforcement of safety rules were mentioned infrequently in the context of accident prevention.

Table 1. Job category at time of accident: Injuries involving longshore operations, selected reporting periods, 1985-86

Job category	Percent
Total, 582 injured workers	100
Checker, clerk	7
Deckman	5
Dockman	12
Driver; forklift, tractor, etc.	15
Holdman	29
Maintenance, mechanic, gearman	7
Warehouse or shedworker	6
Other	19

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 2. Age and sex of worker: Injuries involving longshore operations, selected reporting periods, 1985-86

Age and sex	Percent
Age	
Total, 582 injured workers	100
18-19 years	1
20-24 years	4
25-34 years	18
35-44 years	29
45-54 years	27
55-64 years	19
65 years or more	2
Sex	
Total, 582 injured workers	100
Men	99
Women	1

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Employer's First Report of Injury or Occupational Illness, U.S. Department of Labor, Employment Standards Administration.

Table 3. Length of service in job category, and in longshoring: Injuries involving longshore operations, selected reporting periods, 1985-86

Length of service	Percent
Length of service in job category	
Total, 582 injured workers	100
Less than 1 year	6
1 to 5 years	13
5 years or more	82
Length of service in longshoring	
Total, 582 injured workers	100
Less than 5 years	8
5 to 10 years	16
10 years or more	75
Number of hours worked in the past contract year	
Total, 582 injured workers	100
Less than 400 hours	4
400 to 700 hours	8
700 hours or more	88
New York only: 700 hours or more	15
Other ports: 700 to 800 hours	8
800 hours or more	66
In the past 5 contract years, number of years worker eligible for benefits[1]	
Total, 582 injured workers	100
None	9
1 year	3
2 years	3
3 years	3
4 years	4
5 years	78

[1] Excludes workers who indicated they were not under contract.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 4. Description of accident: injuries involving longshore operations, selected reporting periods, 1985-86

Description of accident	Percent
Total, 582 injured workers	100
Struck by	30
Crate, container, or cargo stow	10
Lashing apparatus	3
Hoisting apparatus	7
Rollers, conveyors	1
Forklift, truck, or other vehicle	3
Ship components	1
Tools, n.e.c.	3
Other equipment	3
Not specified	(1)
Struck against	8
Crate, container, or cargo stow	2
Lashing apparatus	(1)
Hoisting apparatus	(1)
Rollers, conveyors	(1)
Forklift, truck, or other vehicle	1
Ship components	2
Other equipment	3
Overexertion	13
Due to lifting or handling:	
Crate, container, or cargo stow	8
Lashing apparatus	1
Hoisting apparatus	1
Forklift, truck, or other vehicle	(1)
Ship components	(1)
Tools, n.e.c.	1
Other equipment	2
Fall from elevation	10
Fall from:	
Crate, container, or cargo stow	2
Forklift, truck, or other vehicle	2
Gangway on or leading to ship, ladders	2
Hoisting apparatus	1
Weather deck	(1)
Ship area, n.e.c.	1
Shore area, n.e.c.	1
Other	(1)
Not specified	1
Fall on same level	13
Fall on:	
Crane	(1)
Crate, container, or cargo stow	3
Forklift, truck, or other vehicle	(1)
Gangway on or leading to ship, ladders	(1)
Weather deck	2
Ship area, n.e.c.	3
Shore area, n.e.c.	3
Not specified	(1)

See footnotes at end of table.

Table 4. Description of accident: injuries involving longshore operations, selected reporting periods, 1985-86—Continued

Description of accident	Percent
Bodily reaction resulting from slips, trips [2]	7
Surface slipped, tripped on:	
Crane	(1)
Crate, container, or cargo stow	2
Forklift, truck, or other vehicle	1
Gangway on or leading to ship, ladders	1
Weather deck	1
Ship area, n.e.c.	1
Shore area, n.e.c.	2
Other	(1)
Bodily motion, n.e.c.	1
Caught in, under, or between	7
Crate, container, or cargo stow	2
Lashing apparatus	(1)
Hoisting apparatus	1
Rollers, conveyors	(1)
Forklift, truck, or other vehicle	2
Ship components	1
Tools, n.e.c.	(1)
Other equipment	1
Motor vehicle accident	5
Vehicle involved:	
Forklift	1
Tractor or 5th wheel	2
Truck	1
Jeep	(1)
Van or car	(1)
Other	(1)
Rubbed or abraded	4
Contact with temperature extremes	(1)
Contact with radiations, caustics, toxic, or noxious substances	1
Accident type, n.e.c.	1
Nonclassifiable	(1)

[1] Less than 0.5 percent.

[2] Bodily reaction applies to nonimpact cases in which the injury resulted solely from a free bodily motion which imposed stress or strain upon some part of the body. It includes injuries resulting from involuntary motions induced by sudden noise, fright, or efforts to recover from slips or loss of balance.

n.e.c. = not elsewhere classified.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire and Employer's First Report of Injury or Occupational Illness, U.S. Department of Labor, Employment Standards Administration.

Table 5. Source of injury: injuries involving longshore operations, selected reporting periods, 1985-86

Source of injury	Percent
Total, 582 injured workers	100
Bodily motion	10
Boxes, barrels, containers	18
Boxes, barrels, containers, uns.	3
Barrels, kegs, drums	1
Bags, sacks	4
Pots, pans, dishes, trays	(1)
Boxes, crates, cartons	6
Bottles, jugs, flasks	(1)
Bundles, bales	1
Reels, rolls	1
Containers, n.e.c.	1
Buildings and structures	1
Doors, gates	(1)
Walls, fences	(1)
Wharfs, docks	(1)
Chemicals, chemical compounds	1
Chemicals, chemical compounds, uns.	(1)
Chlorine and its compounds	(1)
Clothing	(1)
Coal and petroleum products	(1)
Coal	(1)
Conveyors	1
Food products	(1)
Handtools, not powered	3
Crowbar	(1)
Hammer	(1)
Rope, chain	1
Handtools, not powered, n.e.c.	1
Hoisting apparatus	7
Hoisting apparatus, uns.	2
Cranes, derricks	2
Jacks (mechanical, hydraulic, air, etc.)	(1)
Hoisting apparatus, n.e.c.	3
Ladders	(1)
Fixed	(1)
Machines	1
Machines, uns.	(1)
Machines, n.e.c.	1
Metal items	15
Metal items, uns.	1
Automobile parts	(1)
Structural metal	3
Pipe and fittings	2
Metal fasteners	3
Metal binders	2
Metal chips, splinters, particles	1
Metal items, n.e.c.	3
Paper and pulp	(1)
Particles (unidentified)	3
Scrap, debris, waste materials, n.e.c.	(1)
Steam	(1)
Vehicles	13
Vehicles, uns.	1
Highway vehicles, powered	2
Plant or industrial vehicles	8
Plant or industrial vehicles, uns.	1
Forklifts or other powered carriers	6
Powered towing vehicles	2
Water vehicles	1
Vehicles, n.e.c.	1
Wood items	7
Logs	1
Lumber	2
Skids, pallets	3
Wood items, n.e.c.	1
Working surfaces	14
Working surfaces, uns.	4
Floor	4
Ground	3
Ramps	(1)
Runways, platforms	(1)
Sidewalks, paths, etc.	(1)
Stairs, steps	1
Working surfaces, n.e.c.	2
Rubber products	(1)
Tires	(1)
Miscellaneous, n.e.c.	1
Nonclassifiable	4

[1] Less than 0.5 percent.
n.e.c. = not elsewhere classified.
uns. = unspecified.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Employer's First Report of Injury or Occupational Illness, U.S. Department of Labor, Employment Standards Administration.

Table 6. Nature of injury: injuries involving longshore operations, selected reporting periods, 1985-86

Nature of injury	Percent[1]
Total, 582 injured workers	100
Cut, laceration, puncture	19
Bruise or contusion	28
Muscle sprain or strain, torn ligament	48
Hernia	1
Fracture	18
Object in eye(s)	4
Other	9

[1] Because more than one response is possible, the sum of the percentages exceeds 100. Percentages are based on the total number of persons who answered the question.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey.

SOURCE: Survey questionnaire.

Table 7. Part of body affected: injuries involving longshore operations, selected reporting periods, 1985-86

Part of body affected	Percent
Total, 582 injured workers	100
Head	9
Head, uns.	1
Brain	(1)
Ear(s)	1
Eye(s)	5
Face	1
Face, uns.	(1)
Jaw	(1)
Mouth	(1)
Face, multiple parts	(1)
Face, n.e.c.	(1)
Scalp	1
Skull	(1)
Head, multiple	(1)
Neck	1
Upper extremities	19
Upper extremities, uns.	(1)
Arm(s)	4
Arm(s), uns.	1
Upper arm(s)	(1)
Elbow(s)	2
Forearm(s)	1
Wrist(s)	2
Hand(s)	2
Finger(s)	9
Upper extremities, multiple	1
Trunk	26
Trunk, uns.	1
Abdomen	1
Back	17
Chest	2
Hip(s)	1
Shoulder(s)	4
Trunk, multiple	2
Lower extremities	28
Leg(s)	15
Leg(s), uns.	3
Thigh(s)	1
Knee(s)	8
Lower leg(s)	2
Leg(s), multiple	(1)
Ankle(s)	4
Foot or feet	5
Toe(s)	3
Lower extremities, multiple	1
Multiple parts	14
Body system	(1)
Nonclassifiable	1

[1] Less than 0.5 percent.
n.e.c. = not elsewhere classified.
uns. = unspecified.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Employer's First Report of Injury or Occupational Illness, U.S. Department of Labor, Employment Standards Administration.

Table 8. Lost workdays and hospitalization: Injuries involving longshore operations, selected reporting periods, 1985-86

Lost workdays and hospitalization	Percent
Lost workdays due to injury	
Total, 582 injured workers	100
Did not lose workdays	22
1 to 2 days	3
3 to 4 days	4
5 days or more	71
New York only: 5 days or more	15
Other ports: 5 to 10 days	5
10 days or more	51
Hospitalization required	
Total, 582 injured workers	100
None	88
1 night	2
2 nights	1
3 nights	1
4 nights	(1)
5 nights	1
6 nights or more	5
Hospitalized cases for which length of hospitalization was not estimated	1
	Mean
Mean length (nights) of hospitalization per hospitalized case	6

[1] Less than 0.5 percent.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 9. Activity at time of accident: Injuries involving longshore operations, selected reporting periods, 1985-86

Activity	Percent
Activity at time of accident	
Total, 582 injured workers	100
Handling cargo/equipment by hand	31
Helping crane or winch operator to load or unload cargo	19
Driving yard tractor, lift truck, or other mobile equipment	10
Using handtools	3
Climbing or coming down ladder, gangway, vehicle, etc.	9
Checking cargo	6
Fixing or repairing gear, equipment, or container	6
Other	15
Whether work being done at time of accident was different from work usually performed[1]	
Total, 481 injured workers	100
Not different from usual work	89
Different from usual work	11

[1] Excludes New York.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 10. Personal protective equipment: Injuries involving longshore operations, selected reporting periods, 1985-86

Personal protective equipment	Percent[1]
Personal protective equipment worn at the time of injury	
Total, 582 injured workers	100
Dust mask	3
Gloves	59
Hardhat	77
Reflective vest or jacket	3
Safety goggles	5
Steel-toed safety boots or shoes	61
Other	4
Not wearing any safety gear	9
Personal protective equipment provided or paid for by current or previous employers	
Total, 582 injured workers	100
Dust mask	16
Gloves	21
Hardhat	48
Reflective vest or jacket	9
Safety goggles	15
Steel-toed safety boots or shoes	20
Other	8
None	38

[1] Because more than one response is possible, the sum of the percentages exceeds 100. Percentages are based on the total number of persons who answered the question.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey.

SOURCE: Survey questionnaire.

Table 11. Description of worksite: Injuries involving longshore operations, selected reporting periods, 1985-86

Description of worksite	Percent[1]
Location of worker at time of accident	
Total, 582 injured workers	100
On Shipboard	49
In the hold or between decks	29
On the weather deck	13
On container or cargo stows on ship	5
Somewhere else on a ship	3
On Shore	51
On the pier apron or stringpiece	22
In yard	9
Inside a warehouse, shed, garage	13
Outside at maintenance area or garage	3
Somewhere else on shore	4
Type of ship being worked at time of accident	
Total, 582 injured workers	100
Break/bulk only	32
Break/bulk and containerized	7
Break/bulk and roll-on/roll-off	(2)
Containerized only	13
Containerized and roll-on/roll-off	2
Roll-on/roll-off only	4
Barge	11
Other	1
Don't remember	2
Not working a ship	29
Weather conditions at time of accident	
Total, 582 injured workers	100
Rainy	6
Sunny	30
Hot	16
Cold	7
Windy	7
Calm	12
Clear	41
Cloudy	9
Other	3
Not applicable: Inside building	13
Don't remember	7

[1] Because more than one response is possible for weather conditions, the sum of the percentages for that item exceeds 100. Percentages are based on the total number of persons who answered the question.
[2] Less than 0.5 percent.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 12. Time of accident: Injuries involving longshore operations, selected reporting periods, 1985-86

Time of accident	Percent
Total	100
A.M. (12 midnight-12 noon)	
12 to 1	-
1 to 2	1
2 to 3	1
3 to 4	-
4 to 5	-
5 to 6	(1)
6 to 7	-
7 to 8	2
8 to 9	9
9 to 10	14
10 to 11	14
11 to 12	11
P.M. (12 noon-12 midnight)	
12 to 1	1
1 to 2	6
2 to 3	12
3 to 4	8
4 to 5	8
5 to 6	2
6 to 7	(1)
7 to 8	2
8 to 9	2
9 to 10	3
10 to 11	2
11 to 12	(1)

[1] Less than 0.5 percent.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Employer's First Report of Injury or Occupational Illness, U.S. Department of Labor, Employment Standards Administration. Dashes indicate that no data were reported.

Table 13. Conditions or factors contributing to the accident: Injuries involving longshore operations, selected reporting periods, 1985-86

Conditions or factors workers felt contributed to accident	Percent[1]
Worksite conditions	
Total, 582 injured workers	100
Too noisy	2
Poor weather conditions	6
Cluttered work area	8
Slippery work surface	17
Uneven work surface	19
Equipment broke or didn't work properly	16
Working in too small or tight an area	13
Hard to see or bad lighting	9
Work area not properly safeguarded	5
Other worksite condition	8
None	29
Other contributing factors	
Total, 582 injured workers	100
Co-worker's actions	14
Hurrying or being rushed	22
Being tired	2
Material too heavy or bulky	11
Carelessness on part of injured worker	10
Not aware of danger	20
Tool(s) in bad shape or not right for job	6
Not wearing right safety gear	2
Other factor	4
None	32

[1] Because more than one response is possible, the sum of the percentages exceeds 100. Percentages are based on the total number of persons who answered the question.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 14. Safety and training: Injuries involving longshore operations, selected reporting periods, 1985-86

Safety and training	Percent[1]
Longshore safety training received in the past 3 years	
Total, 582 injured workers	100
Have not had safety training in the past 3 years	59
How to safely operate mobile equipment such as trucks, tractors, forklifts, Hilos, etc.	24
How to safely handle containers or cargo	20
How to safely operate a crane or winch	10
Trained in responsibilities under the labor/management agreement	17
Other	8
Of those who received longshore safety training in the past 3 years:	
Source of safety training:	
Total, 236 injured workers	100
Superintendent	9
Gang foreman	16
Company or shipping association	50
Union	44
Other	5
Whether worker feels that this safety training helped worker avoid accidents	
Total, 236 injured workers	100
No	6
Yes	94
Workers' opinion of how often safety rules are enforced by the company working for when injured	
Total, 582 injured workers	100
Usually	62
Sometimes	21
Hardly ever	8
Not at all	9

[1] Because more than one response is possible for type and source of training, the sum of the percentages for those items exceeds 100. Percentages are based on the total number of persons who answered the question.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Table 15. Accident prevention: Injuries involving longshore operations, selected reporting periods, 1985-86

Actions, methods, or procedures that worker feels would have prevented accident	Percent[1]
Total, 582 injured workers	100
Don't think accident could have been prevented	16
Different work policies	12
Co-worker using better work practices, receiving better training, or being more experienced	10
Repairing or maintaining equipment	9
Using better or different equipment or materials	9
Modifying or improving worksite	9
Personally using better or safer work procedures	9
More time to do job or working more slowly	8
Different packaging or storage of cargo	7
Cleaning work area (removing clutter, grease, etc.)	5
Wearing or using more or different safety equipment	3
More or better job or safety training	2
Company enforcement of safety procedures	1
Using lifting equipment	1
Other	5
Don't know	6

[1] Because more than one response is possible, the sum of the percentages exceeds 100. Percentages are based on the total number of persons who answered the question.

NOTE: The reporting period is October 1985 for New York; April 1986 for all other ports. See appendix A for the scope of the survey. Due to rounding, percentages may not add to total.

SOURCE: Survey questionnaire.

Appendix A. Survey Explanatory Note

Scope of survey

The survey was designed to develop information on work-related injuries to workers involved in longshore operations. As noted in the introduction to this bulletin, the survey covers cases processed under the Federal Longshoremen's and Harbor Workers' Compensation Programs.

Cases were included in the survey if the worker was employed in a firm engaged in stevedoring activities and injured aboard ship, or at the pier, terminal, building way, marine railway, or other adjoining areas normally used by an employer in loading and unloading a vessel. Excluded were cases in which the employer was engaged in drydock and ship repair activities, cases that were 120 days old or more, and those that involved assaults or resulted in fatalities.

To identify in-scope cases, BLS staff reviewed filed copies of *Employer's First Report of Injury or Occupational Illness* required by the Longshoremen's and Harbor Workers' Compensation Act. A questionnaire was mailed by BLS to each of the 582 injured workers meeting the case criteria outlined above; cooperation was voluntary. During the survey period, 294 survey questionnaires were returned by respondents. A telephone followup of nonrespondents netted 87 additional questionnaires, for a total of 381 respondents and a response rate of 65 percent.

Although the data were aggregated for all area offices, it should be noted that the New York cases reflect a different reporting period—October 1985 instead of April 1986. In addition, the questionnaire used in the New York pilot survey did not include question L (see appendix B).

Information on the worker's age, sex, part of the body affected, source of injury, and time of accident were classified from workers' compensation reports filed by employers.

Weighting and estimating procedures

Thirty-five percent of the 582 workers included in the study did not return the questionnaire. These are referred to as *unit* nonrespondents. To determine the most suitable way to reduce nonresponse bias in the published estimates, the following characteristics from employer compensation reports were examined for the 381 respondents and 153 nonrespondents permitting comparison: Age, sex, nature of injury, part of body affected, source of injury, and type of accident. The largest differences between the two injured groups were in their age distribution, but such differences did not warrant an age partition (less than 45 years and 45 years and older, for example). Therefore, the published counts of injured workers reflect the use of an overall nonpartitioned nonresponse factor.

In addition to workers not returning the questionnaire, there were a small number that responded to the survey but did not answer all of the questions. These are referred to as *item* nonrespondents. To account for this type of nonresponse, it was assumed that the response distribution of the item nonrespondents would be the same as the response distribution of the item respondents.

For each question, a final weight for each respondent was calculated as the product of the adjustment factors for unit and item nonresponse. The estimate of the total number of in-scope injured workers for each question is equal to the sum of the final weights of the respondents.

The estimate of mean nights of hospitalization does not include cases in which workers indicated hospitalization but did not provide the length of stay.

Reliability

All estimates were derived from a census of injured workers within the scope of this study; thus, such estimates are not subject to sampling errors. As in any survey, however, they were affected by nonsampling errors stemming from many sources, such as inability to obtain information about all cases in the survey, mistakes in recording or coding the data, and definitional difficulties. To minimize the nonsampling errors in the estimates, the completed questionnaires were edited, both manually and by computer, and apparent inconsistencies were resolved.

Appendix B. Survey Questionnaire

Bureau of Labor Statistics
Work Injury Report-Injuries in Longshoring

U.S. Department of Labor

The information collected on this form by the Bureau of Labor Statistics and the State Agencies cooperating in its statistical program will be held in confidence and will be used for statistical purposes only.

This report is authorized by law, 29 U.S.C. 2. Your voluntary cooperation is needed to make the results of this survey comprehensive, accurate, and timely.

Form Approved
O.M.B. No. 1220-0047
Approval Expires 6/31/98

Survey Code 1 8 6 Case Number _____ Date of Accident __-__-__

A. What was your work category at the time of your accident? (Check one.)
1. ☐ Checker/clerk
2. ☐ Deckman
3. ☐ Deckman
4. ☐ Driver; forklift, tractor, etc.
5. ☐ Holdman
6. ☐ Maintenance, mechanic, gearman
7. ☐ Warehouse or shed worker
8. ☐ Other: (Describe) _____

B. How long have you worked in this category? (Check one.)
1. ☐ Less than 1 year
2. ☐ 1 to 5 years
3. ☐ 5 years or more

C. How long have you done longshoring work? (Check one.)
1. ☐ Less than 5 years
2. ☐ 5 to 10 years
3. ☐ 10 years or more

D. How many hours have you worked in the past contract year in longshoring? (Check one.)
1. ☐ Less than 400 hours
2. ☐ 400 to 700 hours
3. ☐ 700 to 800 hours
4. ☐ 800 hours or more

E. In the last 6 contract years ('91-'96), how many years have you been eligible for fringe benefits such as holiday pay, vacations, etc.? (Check one.)
1. ☐ 1 year
2. ☐ 2 years
3. ☐ 3 years
4. ☐ 4 years
5. ☐ 5 years
6. ☐ None

F. Where were you when injured? (Check one.)

On Shipboard
1. ☐ In the hold or 'tween deck
2. ☐ On the weather deck
3. ☐ On container or cargo stows on ship
4. ☐ Somewhere else on a ship:
(Describe) _____

On Shore
5. ☐ On the pier apron or stringpiece
6. ☐ In yard
7. ☐ Inside a warehouse, shed, garage
8. ☐ Outside at maintenance area or garage
9. ☐ Somewhere else on shore:
(Describe) _____

G. What were the weather conditions at the time of your accident? (Check all that apply.)
1a. ☐ Rainy
2a. ☐ Hot
3a. ☐ Windy
4a. ☐ Clear
b. ☐ Sunny
b. ☐ Cold
b. ☐ Calm
b. ☐ Cloudy
5. ☐ Other: (Describe) _____
6. ☐ Was inside building
7. ☐ Don't remember

H. What type of ship was your gang working when you were injured? (Check one.)
1. ☐ Break/bulk only
2. ☐ Break/bulk and containerized
3. ☐ Break/bulk and roll-on/roll-off
4. ☐ Containerized only
5. ☐ Containerized and roll-on/roll-off
6. ☐ Roll-on/roll-off only
7. ☐ Barge
8. ☐ Other: (Describe) _____
9. ☐ Don't remember
10. ☐ Was not working a ship

I. Check safety gear that employers gave you or partially paid for. (Check all that apply.)
1. ☐ Dust mask
2. ☐ Gloves
3. ☐ Hard hat
4. ☐ Reflective vest or jacket
5. ☐ Safety goggles
6. ☐ Steel-toed safety boots or shoes
7. ☐ Other: (Describe) _____
8. ☐ None

J. What safety gear were you wearing when injured? (Check all that apply.)
1. ☐ Not wearing any safety gear
2. ☐ Dust mask
3. ☐ Gloves
4. ☐ Hard hat
5. ☐ Reflective vest or jacket
6. ☐ Safety goggles
7. ☐ Steel-toed safety boots or shoes
8. ☐ Other: (Describe) _____

K. What were you doing when injured? (Check one.)
1. ☐ Handling cargo/equipment by hand (lifting crate, stacking boxes, etc.)
2. ☐ Helping crane or winch operator to load or unload cargo
3. ☐ Driving yard tractor, lift truck, or other mobile equipment (Describe) _____
4. ☐ Using hand tools: (Describe) _____
5. ☐ Climbing or coming down ladder, gangway, vehicle, etc.
6. ☐ Checking cargo
7. ☐ Fixing or repairing gear, equipment, or container
8. ☐ Other: (Describe) _____

L. Was the work you were doing when injured different from the work you usually do?
1. ☐ No
2. ☐ Yes: (Explain how it was different) _____

M. How did your injury occur? (Check one.)

1. ☐ Slipped/tripped/fell on same level
2. ☐ Fell from higher level: (Describe what you fell from)

   _____
3. ☐ Struck by dolt, spreader, hook, container, tool, vehicle: (Describe) _____
4. ☐ Hit against container, cargo, equipment, etc.
5. ☐ Caught between pallets, boxes, barrels, machinery, etc.
6. ☐ Injured while lifting cargo, etc.
7. ☐ Injured in motor vehicle accident: (Explain) _____
8. ☐ Other: (Describe)

   _____

N. Check any working conditions that may have caused your accident. (Check all that apply.)

1. ☐ Too noisy
2. ☐ Poor weather conditions
3. ☐ Cluttered work area
4. ☐ Slippery work surface
5. ☐ Uneven work surface
6. ☐ Equipment broke or didn't work correctly
7. ☐ Working in too small or tight an area
8. ☐ Hard to see
9. ☐ Work area not properly safeguarded: (Describe) _____

   _____
10. ☐ Other: (Describe) _____
11. ☐ None

O. Check any items you feel contributed to your accident. (Check all that apply.)

1. ☐ Co-worker's fault: (Explain)

   _____
2. ☐ Hurrying or rushed
3. ☐ Tired
4. ☐ Material too heavy or bulky
5. ☐ Carelessness
6. ☐ Not aware of danger
7. ☐ Tool(s) in bad shape or not right for job
8. ☐ Not wearing right safety gear
9. ☐ Other item; for example, working double shift, etc.: (Describe)

   _____
10. ☐ None

P. What were your injuries? (Check all that apply.)

1. ☐ Cuts, lacerations, or punctures
2. ☐ Bruises or contusions
3. ☐ Muscle strain or sprain, torn ligaments
4. ☐ Hernia
5. ☐ Fracture(s): (Part(s) of body broken) _____
6. ☐ Object in eye(s)
7. ☐ Other: (Describe) _____

Q. How many workdays did you lose, or do you think you'll lose, due to your injury? (Check one.)

1. ☐ Did not lose workdays
2. ☐ 1 to 2 days
3. ☐ 3 to 4 days
4. ☐ 5 to 10 days
5. ☐ 10 days or more

R. Were you admitted to the hospital because of your injuries? (Check one.)

1. ☐ No 2. ☐ Yes

If YES, how many nights were you in the hospital?

_____ Nights

S. Have you had any training in longshoring operations in the last 3 years which included SAFETY training? (Check all that apply.)

1. ☐ No
2. ☐ Yes - How to safely operate mobile equipment such as trucks, tractors, forklifts, Hilo, etc.
3. ☐ Yes - How to safely handle containers or cargo
4. ☐ Yes - How to safely operate a crane or winch
5. ☐ Yes - Trained in my responsibilities under the labor/management agreement
6. ☐ Other: (Describe) _____

T. Who provided this SAFETY training? (Check all that apply.)

1. ☐ Have not had safety training in past 3 years
2. ☐ Superintendent
3. ☐ Gang foremen
4. ☐ Company or shipping association
5. ☐ Union
6. ☐ Other: (Describe) _____

U. Has this SAFETY training helped you to avoid accidents? (Check one.)

1. ☐ Have not had safety training in past 3 years
2. ☐ No
3. ☐ Yes

V. Did the company you were working for when injured enforce safety rules? (Check one.)

1. ☐ Usually 3. ☐ Hardly ever
2. ☐ Sometimes 4. ☐ Not at all

W. Describe how you think your accident could have been prevented.

_____

_____

_____

_____

_____

_____

In your own words, tell how your accident happened.

Work Injury Reports

The following reports may be purchased from the U.S. Department of Commerce, National Technical Information Service (NTIS), 5285 Port Royal Road, Springfield, VA 22161. Cost $9.95 for paper copy, $5.95 for fiche. Add $3 for handling fee.

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  NTIS Accession No. PB83 207985 (1978)
- Survey of Welding and Cutting Accidents Resulting in Injuries
  NTIS Accession No. PB83 208017 (1978)
- Survey of Scaffold Accidents Resulting in Injuries
  NTIS Accession No. PB83 208009 (1978)
- Survey of Power Saw Accidents Resulting in Injuries
  NTIS Accession No. PB83 207993 (1978)
- Accidents Involving Eye Injuries
  NTIS Accession No. PB83 182535 (1980)
- Accidents Involving Face Injuries
  NTIS Accession No. PB83 183335 (1980)
- Accidents Involving Head Injuries
  NTIS Accession No. PB83 183343 (1980)
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  NTIS Accession No. PB83 182527 (1981)
- Injuries Related to Servicing Equipment
  NTIS Accession No. PB83 182543 (1981)
- Back Injuries Associated with Lifting
  NTIS Accession No. PB83 183285 (1982)
- Work-Related Hand Injuries and Upper Extremity Amputations
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  Bulletin 2203 (1984), $1.75.
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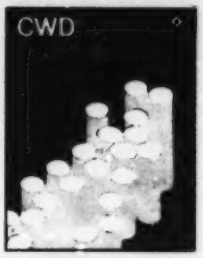

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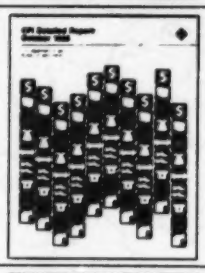

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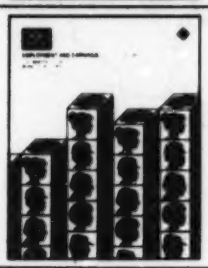

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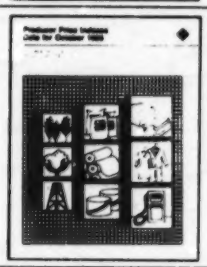

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